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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,590	09/10/2003	Karl-Ernst Mack	2002DE313	5263

7590 03/25/2004

Clariant Corporation  
 Industrial Property Department  
 4000 Monroe Road  
 Charlotte, NC 28205

EXAMINER

KEYS, ROSALYND ANN

ART UNIT PAPER NUMBER

1621

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/659,590

**Applicant(s)**

MACK ET AL.

**Examiner**

Rosalynd Keys

**Art Unit**

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/14/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 1-15 are pending.

Claims 1-15 are rejected.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

3. The information disclosure statement filed November 14, 2003 has been considered, except reference CB (no explanation of relevancy in English).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolfram (US 4,647,709) in view of Nakayama et al. (US 4,289,916).

Wolfram teaches a process for ring-chlorinating toluene in the presence of Lewis acid as catalysts and chlorinated dimethylphenoxathiin as cocatalyst (see column 4, lines 5-29). The catalyst concentration is generally between about 0.001 and 5% by weight relative to 2,8-dimethylphenoxathiin (see column 5, lines 4-7). The chlorination reaction temperature is between about 0°C and 80°C (see column 5, lines 50-52). The chlorination can be carried out in the absence or presence of a solvent (see column 5, lines 10 and 11). The amount of catalyst and cocatalyst is normally between about 0.005 and 5 % by weight, relative to the starting toluene (see column 5, lines 46-49). The chlorination degree is at most =1 (see column 5, lines 39). Higher degrees of chlorination would lead to polychlorination (see column 5, lines 39-41).

Wolfram differs from the instant invention in that Wolfram is directed to ring-chlorinating toluene, whereas the instant invention is directed to ring-chlorinating xylene.

Nakayama et al. teach a process for preparing p-chloroalkylbenzene comprising chlorinating an alkylbenzene in the presence of a phenoxthine and a Lewis acid (see entire disclosure, in particular claims 1-5). The alkylbenzene compound to be chlorinated preferably contains a C<sub>1</sub>-C<sub>4</sub> alkyl group. Thus, chlorination of a xylene is implicitly taught to be similar to chlorination of a toluene in the presence of a phenoxthine compound.

One having ordinary skill in the art at the time the invention was made would have found it obvious to substitute xylene for toluene in the process taught by Wolfram. The skilled artisan would have a reasonable expectation of success, since Nakayama et al. teach a process which is similar to the process of Wolfram and which utilizes a similar catalyst. Thus, the instant process proceeds as one of ordinary skill in the art would expect, i.e., chlorination of an alkylbenzene in the presence of a Lewis acid and phenoxthine compound would predominately produce the p-chloroalkylbenzene. Thus, the instant invention is an expected reaction.

Wolfram further differs from the instant invention in that Wolfram teaches that the degree of chlorination is at most 1. However, there is an implicit teaching that the use of a degree of chlorination of greater than 1 would give polychlorinated compounds. Thus, the production of the isomer mixture in the instant invention is expected when the degree of chlorination is greater than 1.

**Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mais et al. (US 5,095,157) teach preparation of 2-chloro-4-nitro-alkylbenzene in the presence of a Friedel-Craft catalyst and dibenzo-condensed sulfur heterocycle cocatalyst (see entire disclosure, in particular the abstract) and Krishnamurti et al. (US 5,621,153) teach preparing chloro-alkylbenzenes in the presence of Lewis acid catalyst and a cocatalyst (see entire disclosure, in particular the abstract).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosalyn Keys whose telephone number is 571-272-0639. The examiner can normally be reached on M and F 3:00-8:00 pm and T-R 5:30-10:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Rosalyn Keys

Primary Examiner

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March 20, 2004